REMARKS

Applicants respectfully requests reconsideration of this application as amended. Claims 1, 5, 6, 7, 8, 11, and 20 have been amended, and claims 29-31 have been added. No claims have been canceled. Therefore, claims 1-31 are presented for examination.

With respect to the Examiner's grounds of rejection on the previously cited references, Applicants respectfully maintain the arguments made in previous Responses. In summary, none of the references (previously cited, or cited in the Office Action associated with the current Response) discloses, teaches, or suggests examining data, and moderating interrupts if the data is latency-sensitive data, or moderating interrupts based on the characteristics of the data as required by the claims. The Examiner has referred to various portions of the cited references, yet none of those portions, and none of the portions read by the undersigned, discloses, teaches, or suggests what is recited in the claims. The specifics are discussed below.

Rejections – 35 U.S.C. §102

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP §2131.

In the Office Action mailed March 9, 2006 (hereinafter "Office Action"), the

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Examiner rejected claims 1, 11 and 20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,449,658 (hereinafter "Lafe"). Immediately thereafter, the Examiner indicates that claims 1, 11, and 25 (rather than 1, 11, and 20) are disclosed by Khanna. Khanna is listed in the "Notice of References Cited" document attached to the Office Action.

The undersigned attempted to get clarification on this matter by calling the Examiner and leaving a message, but the call had not been returned as of the date of this Response. As best as the undersigned can tell, the Examiner's arguments appear to be directed to Khanna rather than Lafe. As such, Applicants' arguments in this section are based on Khanna rather than Lafe.

The Examiner also rejected claims 1, 11, and 20 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,905,874 (hereinafter "Johnson").

Neither Johnson nor Khanna describes, expressly or inherently, at the least, an I/O device to "moderate one or more interrupts of an interrupt scheme on an associated computing platform processor if the fragment of electronic data comprises latency-sensitive data", as required by, for example, claim 1. Each of the other pending independent claims recites limitations that are similar to these limitations of claim 1, although some differences may exist among the limitations of the other pending independent claims. These similar limitations nevertheless patentably distinguish the claims over Johnson and/or over Khanna.

Embodiments of the subject application as recited in the claims disclose

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an I/O device that is operative to <u>moderate</u> interrupts based, at least in part, on
one or more <u>characteristics</u> (e.g., latency-sensitive) of electronic data.

Johnson discloses a NIC that includes a buffer for temporarily storing
data, a media interface device for transferring data between the buffer and the
network, a bus interface for transferring data between the computer system's
memory and the buffer, and a local processor for writing a unique value at a
predetermined location within the buffer, for periodically comparing the data
value at the predetermined location with the unique value, and for initiating data
transfer from the buffer to the computer's memory when the data value does not
match the unique value. The local processor of the NIC writes the unique value
at the location and then periodically compares the data at that location with the
unique value. When the data value is different from the unique value, the local
processor has detected new data in that block of memory, and then initiates data
transfer of the new data from that block of memory to the memory of the
computer system. (See Johnson, Abstract.)

In Johnson, data transfer (whether by interrupt to host processor, or DMA,
for example) occurs without examining the packets characteristics of packets are
stored in the buffer. In other words, Johnson does not, for example, disclose
moderating "one or more interrupts" "if the fragment of electronic data comprises
latency-sensitive data" as required by, for example, claim 1.

Khanna discloses a technique to improve communication between two
computers by using a BIOS (basic input/output system) of a first computer to

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control a NIC (network interface card) in order to communicate with a second

computer. In an embodiment, the BIOS of the first computer is configured to

communicate with the second computer according to the timer interrupt to allow

the second computer to control the first computer both when the first computer

has a running operating system, and when the first computer does not have a

running operating system. (See Khanna, column 1, line 65 – column 2, line 12.)

In one aspect of Khanna, an asynchronous interrupt may be generated by

an interrupt controller whenever a NIC receives a data packet from the network

(Khanna, column 4, line 61). However, Khanna only discloses that the interrupts

are generated *whenever* a NIC receives a packet, but does not disclose that

these asynchronous interrupts are generated after examining them and after

determining that the packets are latency-sensitive (or based on characteristics of

the packet). Khanna, therefore, does not disclose moderating "one or more

interrupts" "if the fragment of electronic data comprises latency-sensitive data" as

required by, for example, claim 1.

Therefore, neither Johnson nor Khanna describes, expressly or inherently,

each and every element and limitation of the rejected claims. Consequently, the

Examiner has not established a *prima facie* case of anticipation, and the

Applicants respectfully request that the Examiner withdraw the rejection of claims

1, 11, 20, and 25 (as well as claims 3, 5 referred to by the Examiner in the same

section as this rejection).

35 U.S.C. §103(a) Rejections

In order to establish a *prima facie* case of obviousness:

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, *the prior art reference (or references when combined) must teach or suggest all the claim limitations.*" (Emphasis added). *In re Vaech*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Manual of Patent Examining Procedure (MPEP), 8th Edition, August 2001, §2143.

Drottar

Drottar discloses a method to transmit a packet including information describing a bus transaction to be executed at a remote device. (See Drottar, for example, Abstract.)

Claims 2, 4, 12, 13, 21, and 22 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Johnson in view of U.S. Patent No. 6,333,929, hereinafter "Drottar".

Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness because:

1. There is no suggestion or motivation in Johnson or in Drottar for modification.

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2.   The combination of Johnson and Drottar does not teach or suggest all the claim limitations.

<u>There is no suggestion or motivation in Johnson or in Drottar for modification</u>

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). MPEP §2143.01. Furthermore, even though a combined element may be a "technologically simple concept", the reference must still provide the motivation for the combination. (*In re Kotzab*, 217 F.3d at 1371, 55 USPQ2d at 1318.) MPEP §2143.01.

Johnson is directed to a method for reducing data transfer latency by using a NIC to screen data and initiate transfers to host memory. Drottar is directed to a packet format that is more compatible with distributed computer systems. Neither suggests the desirability for features described in the other reference. For example, Johnson does not suggest any desirability for a different packet format to improve data transfer latency. Furthermore, Drottar does not suggest the desirability for modifying NICs to achieve compatibility.

Therefore, both Johnson and Drottar lack suggestion or motivation for combination with one another.

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The combination of Johnson and Drottar does not teach or suggest all the claim limitations

Even if the motivation for combination existed in either Johnson and Drottar, the combination of the two references does not produce the Applicants' invention as embodied by, for example, claim 1. As discussed above, Johnson does not describe, expressly or inherently, an I/O device that is operative to "moderate one or more interrupts of an interrupt scheme on an associated computing platform processor if the fragment of electronic data comprises latency-sensitive data". Drottar also does not describe, expressly or inherently, this limitation. Furthermore, neither Johnson nor Drottar teaches or suggests this limitation. Therefore, the combination of Johnson and Drottar does not teach or suggest all claim limitations.

Since there is no suggestion or motivation in Johnson or in Drottar for modification, and the combination of Johnson and Drottar does not teach or suggest all the claim limitations, Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness. Therefore, Applicants respectfully request that the Examiner withdraw his rejection of claims 2, 4, 12, 13, 21, and 22.

Gentry Jr.

Gentry discloses a method for polling a NIC. An interrupt that would normally alert a host processor to the arrival of a packet on the network is suspended during a polling mode of operation. Each time the network interface

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is polled, any waiting packets are processed. However, if a threshold amount of
time passes, or a threshold number of packets are received without being
processed, interrupts may be enabled to ensure packets are serviced. (See
Gentry, for example, column 2, lines 55-65.)

Claims 6-10, 15-19, and 24-28 have been rejected under 35 U.S.C.
§103(a) as being unpatentable over Johnson in view of U.S. Patent No.
6,434,651, hereinafter "Gentry".

Applicants respectfully submit that the Examiner has not established a
prima facie case of obviousness because the combination of Johnson and
Gentry does not teach or suggest all the claim limitations.

The combination of Johnson and Gentry does not teach or suggest all the claim limitations

As discussed above, Johnson does not describe, expressly or inherently,
a NIC that is "moderate one or more interrupts of an interrupt scheme on an
associated computing platform processor if the fragment of electronic data
comprises latency-sensitive data". Gentry also does not describe, expressly or
inherently, this limitation because in Gentry, the NIC does not moderate its
interrupts based on the contents of the data received. Furthermore, neither
Johnson nor Gentry teaches or suggests this limitation. Therefore, the
combination of Johnson and Gentry does not teach or suggest all claim
limitations.

Since the combination of Johnson and Gentry does not teach or suggest all the claim limitations, Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness. Therefore, Applicants respectfully submit that the Examiner withdraw his rejection of claims 6-10, 15-19, and 24-28.

Conclusion

Applicants respectfully submit that the claims as amended are in condition for allowance. The Examiner is invited to initiate an interview with the undersigned by calling 949-498-0601 if the Examiner believes that such an interview will advance prosecution of this application.
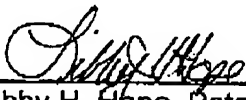
Request for an Extension of Time

Applicants respectfully petition for a one-month extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a). Please charge our Deposit Account No. 50-0221 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 50-0221.

Respectfully submitted,

Date: July 7, 2006

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